Some problems arising in population dynamics with non-linear diffusion

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In this talk we present some theoretical results about nonlinear partial differential equations coming from population dynamics. Specifically, we focus our attention in models where the diffusion (the spatial movement of the species) is non-linear; that is, it depends on the value of the species in a non-linear way or even depends on another species living in the habitat. We show, through concrete examples, the main differences between linear diffusion models and nonlinear diffusion and the mathematical difficulties arising in this case.

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